MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
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DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

NOTICE OF ACCEPTANCE (NOA)

Johns Manville Corporation
717 17th Street
Denver, CO 80202

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Johns Manville APP Modified Bitumen Roofing Systems Over Concrete Decks.

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA No. 13-0129.05 and consists of pages 1 through 20.
The submitted documentation was reviewed by Jorge L. Acebo.

MIAMI-DADE COUNTY APPROVED

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Modified Bitumen
Materials:	APP
Deck Type:	Concrete
Maximum Design Pressure:	-315 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
JM APP Base	39-3/8" x 48'10"	ASTM D6509	APP modified asphalt, fiberglass reinforced, smooth surfaced base sheet.
APPeX 4S	39-3/8" x 32'10"	ASTM D6222 Type I Grade S	APP modified asphalt, polyester reinforced, smooth surfaced membrane **for use as a Base and/or Ply Sheet only**.
APPeX 4.5M	39-3/8" x 32'10"	ASTM D6222 Type I Grade G	APP modified asphalt, polyester reinforced, mineral surfaced membrane.
APPeX 4.5M FR	39-3/8" x 32'10"	ASTM D6222 Type I Grade G	APP modified asphalt, polyester reinforced, fire-retardant, mineral surfaced membrane.
Tricor M FR	39-3/8" x 34'1"	ASTM D6223	APP modified asphalt, polyester / glass reinforced, granule surfaced membrane.
Tricor M FR CR	39-3/8" x 34'1"	ASTM D6223	APP modified asphalt, polyester / glass reinforced, coated granule surfaced membrane.
Tricor S	39-3/8" x 32'10"	ASTM D6223	APP modified asphalt, polyester / glass reinforced, smooth surfaced membrane **for use as a Base and/or Ply Sheet only**.
GlasPly Premier	36" x 180'	ASTM D2178 Type VI	Type VI asphalt impregnated glass felt for use in conventional and modified bitumen built-up roofing.
GlasPly IV	36" x 180'	ASTM D2178 Type IV	Type IV asphalt impregnated glass felt for use in conventional and modified bitumen built-up roofing.
PermaPly 28	36'' x 106';	ASTM D4601	Type II asphalt impregnated and coated glass fiber base sheet.
Ventsulation	36" x 36'	ASTM D4897 Type II	Heavy duty fiber glass base sheet impregnated and coated on both sides with asphalt with or without fine mineral stabilizer.
GlasBase Plus	36" x 106'	ASTM D4601	Type II SBS and asphalt blend impregnated and coated glass fiber base sheet with fine mineral stabilizer.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI	Polyisocyanurate Insulation.	Johns Manville
ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI	Polyisocyanurate Insulation with glass reinforced facers	Johns Manville
ENRGY 3 FR, ENRGY 3 FR 25 PSI	Polyisocyanurate Insulation with inorganic coated glass reinforced facers; bottom face is premium coated for combustible decks.	Johns Manville
Fesco Foam, DuraFoam	Polyisocyanurate Insulation with perlite facer.	Johns Manville
Retro-Fit Board, DuraBoard	High-density perlite roof insulation.	Johns Manville
Fesco Board	Rigid perlite roof insulation board.	Johns Manville
Structodek® High Density Fiber Board Roof Insulation	High Density Fiber Board.	Blue Ridge Fiber Board, Inc.

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	All Purpose Fastener	Insulation fastener for concrete decks.	#14 x 24" max. length; #3 Phillips head	Johns Manville
2.	Structural Concrete Fastener	Insulation fastener for concrete decks.	0.214" min. dia. x 12" max. length; wafer head	Johns Manville
3.	UltraFast 3" Round Metal Plate or Square Recessed Metal Plate	Galvalume AZ55 steel plate	3" round 3" square	Johns Manville
4.	UltraFast Fastener	Insulation fastener for concrete decks.	#12 x 8" max. Length, #3 Phillips head.	Johns Manville

EVIDENCE SUBMITTED:

Test Agency	Test Identifier	Description	Date
Factory Mutual Research Corp.	J.I. 0X0A9.AM	4470	03/25/94
	J.I. 0W6A2.AM	4470	02/05/93
	J.I. 0X7A4.AM	4470	08/26/93
	J.I. 3001482	4470	08/11/98
	J.I. 3002823	4470	04/01/99
	J.I. 3003468	4450	02/02/00
	J.I. 3007148	4470	04/19/00
	3009499	4470	04/04/01
	3011248	4450	11/01/02
	3012974	4470	06/03/02
	3037540	4450	10/20/10
UL, LLC	R10167	UL 790	05/27/13
Exterior Research & Design, LLC	#4361-2.04.97-1	TAS 114(J)	04/15/97
	10390A.12.97-1	TAS 114(J)	12/15/97
	10390A.10.97-1	TAS 114(J)	10/15/97
	10391.01.03	TAS 114(J)	01/29/03
PRI Construction Materials, LLC	JMC-053-02-01	ASTM D5147/D6222	05/01/13
	JMC-054-02-01	ASTM D5147/D6223	06/04/12
	JMC-055-02-01	ASTM D6509	05/29/12
	JMC-070-02-01	ASTM D2178 TYPE IV	04/17/12
	JMC-071-02-01	ASTM D2178 TYPE VI	04/17/12
	JMC-072-02-02	ASTM D4601	06/04/12
	JMC-074-02-01	ASTM D4897	04/17/12
	JMC-093-02-01	ASTM D4601	08/02/12
	JMC-107-02-01 Rev 4	ASTM D903	11/04/13
		ASTM D1876	
		ASTM D5147	
		TAS 117(B)	
		TAS 117(A)	
		TAS 114(C)	

APPROVED ASSEMBLIES

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(1): One or more layers of insulation adhered with approved asphalt.

All General and System limitations apply.

One or more layers of any of the following insulations:

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, Fesco Foam, DuraFoam Minimum 1.4" thick	**N/A**	**N/A**
Fesco Foam, DuraFoam Minimum 1.5" thick	**N/A**	**N/A**
Fesco Board Minimum ¾" thick	**N/A**	**N/A**
Retro-Fit Board, DuraBoard Minimum ½" thick	**N/A**	**N/A**

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs./100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet:	One ply of PermaPly 28 fully adhered to the insulated substrate with approved mopping asphalt at an application rate of 20-40 lbs./sq.
Ply Sheet:	(Optional) One or more plies of JM APP Base or APPeX 4S heat welded to base sheet while maintaining 4" side laps and 6" end laps.
Membrane:	One or more plies of APPeX 4.5M or APPeX 4.5M FR heat welded while maintaining 4" side laps and 6" end laps.

Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, Grundy AL MB aluminum coating at a rate of 1-1/2 gal./sq. Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal./sq. or APOC 212 Aluminum Roof Coating at 3 gal./sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal./sq. with optional 60 lbs./sq. of roofing granules embedded in wet coating.

Maximum Design Pressure: -150 psf. (See General Limitation #9.)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(2): One or more layers of insulation adhered with approved asphalt.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3, ENRGY 3 25 PSI,ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, Fesco Foam		
Minimum 1.5" thick	**N/A**	**N/A**

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
DuraBoard		
Minimum ½" thick	**N/A**	**N/A**

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs./100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: One ply of PermaPly 28 fully adhered to the insulated substrate with approved mopping asphalt at an application rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of JM APP Base or APPeX 4S heat welded to base sheet while maintaining 4" side laps and 6" end laps.

Membrane: One or more plies of APPeX 4.5M or APPeX 4.5M FR heat welded while maintaining 4" side laps and 6" end laps.

Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, Grundy AL MB aluminum coating at a rate of 1-1/2 gal./sq. Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal./sq. or APOC 212 Aluminum Roof Coating at 3 gal./sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal./sq. with optional 60 lbs./sq. of roofing granules embedded in wet coating.

Maximum Design Pressure: -305 psf. (See General Limitation #9.)
-277.5 psf. (CGF insulation boards; See General Limitation #9)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(3): One or more layers of insulation adhered with approved adhesive or asphalt.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25		
Minimum 1.5" thick	**N/A**	**N/A**

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
FescoBoard		
Minimum ¾" thick	**N/A**	**N/A**
DuraBoard		
Minimum ½" thick	**N/A**	**N/A**

Note: All layers of insulation shall be adhered with approved asphalt within the EVT range and at a rate of 20-40 lbs./100 ft^2 or MBR Bonding Adhesive in 1-½" wide beads at maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAs 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Base Sheet: (Optional if using mopped ply sheets) One ply of PermaPly 28 fully adhered to the insulated substrate with approved mopping asphalt at an application rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of JM APP Base or APPeX 4S heat welded to base sheet while maintaining 4" side laps and 6" end laps or one or more plies GlasPly IV or GlasPly Premier fully adhered with approved mopping asphalt at an application rate of 20-40 lbs./sq.

Membrane: One or more plies of APPeX 4.5M or APPeX 4.5M FR heat welded while maintaining 4" side laps and 6" end laps.

Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, Grundy AL MB aluminum coating at a rate of 1-1/2 gal./sq. Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal./sq. or APOC 212 Aluminum Roof Coating at 3 gal./sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal./sq. with optional 60 lbs./sq. of roofing granules embedded in wet coating.

Maximum Design Pressure: -120 psf. (See General Limitation #9.)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(4): One or more layers of insulation adhered with approved asphalt.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25, Fesco Foam, DuraFoam		
Minimum 1.5" thick	**N/A**	**N/A**

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
DuraBoard		
Minimum ½" thick	**N/A**	**N/A**

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs./100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: One ply of JM APP Base or APPeX 4S heat welded while maintaining 4" side laps and 6" end laps.

Ply Sheet: (Optional) One or more plies of JM APP Base or APPeX 4S heat welded to base sheet while maintaining 4" side laps and 6" end laps.

Membrane: One or more plies of APPeX 4.5M or APPeX 4.5M FR heat welded while maintaining 4" side laps and 6" end laps.

Surfacing: (Optional) Install the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.

Maximum Design Pressure: -67.5 psf. (See General Limitation #9.)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type B(1): Base layer of insulation mechanically attached, optional top layer adhered with approved asphalt.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25, Fesco Foam, DuraFoam		
Minimum 1.5" thick	**2 with 3**	**1:2 ft²**

Note: Base layer shall be mechanically attached with fasteners and density described. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Top Insulation Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Retrofit Board, DuraBoard, Structodek® High Density Fiber Board Roof Insulation		
Minimum ½" thick	**N/A**	**N/A**
Fesco Board		
Minimum ¾" thick	**N/A**	**N/A**

Note: Apply optional top layer of insulation in a full mopping of any approved mopping asphalt within the EVT range and at a rate of 20-40 lbs./100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as Base Layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Base Sheet: One ply of PermaPly 28 fully adhered to the insulated substrate with approved mopping asphalt at an application rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of JM APP Base or APPeX 4S heat welded to base sheet while maintaining 4" side laps and 6" end laps.

Membrane: One or more plies of APPeX 4.5M or APPeX 4.5M FR heat welded while maintaining 4" side laps and 6" end laps.

Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, Grundy AL MB aluminum coating at a rate of 1-1/2 gal./sq. Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal./sq. or APOC 212 Aluminum Roof Coating at 3 gal./sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal./sq. with optional 60 lbs./sq. of roofing granules embedded in wet coating.

Maximum Design Pressure: -45 psf. (See General Limitation #7.)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type B(2): Base layer of insulation mechanically attached, optional top layer adhered with approved asphalt.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25, Fesco Foam, DuraFoam		
Minimum 1.5" thick	**2 with 3**	**1:1.33 ft²**

Note: Base layer shall be mechanically attached with fasteners and density described. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Top Insulation Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Retrofit Board, DuraBoard, Structodek® High Density Fiber Board Roof Insulation		
Minimum ½" thick	**N/A**	**N/A**
Fesco Board		
Minimum ¾" thick	**N/A**	**N/A**

Note: Apply optional top layer of insulation in a full mopping of any approved mopping asphalt within the EVT range and at a rate of 20-40 lbs./100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as Base Layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Base Sheet: One ply of PermaPly 28 fully adhered to the insulated substrate with approved mopping asphalt at an application rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of JM APP Base or APPeX 4S heat welded to base sheet while maintaining 4" side laps and 6" end laps.

Membrane: One or more plies of APPeX 4.5M or APPeX 4.5M FR heat welded while maintaining 4" side laps and 6" end laps.

Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, Grundy AL MB aluminum coating at a rate of 1-1/2 gal./sq. Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal./sq. or APOC 212 Aluminum Roof Coating at 3 gal./sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal./sq. with optional 60 lbs./sq. of roofing granules embedded in wet coating.

Maximum Design Pressure: -52.5 psf. (See General Limitation #7.)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type D: All layers of insulation and base sheet simultaneously attached.

All General and System limitations apply.

One or more layers of any of the following insulations:

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25, ENRGY 3 FR, ENRGY 3 FR 25 PSI		
Minimum 1.4" thick	**N/A**	**N/A**
Fesco Foam, DuraFoam		
Minimum 1.5" thick	**N/A**	**N/A**
Retro-Fit Board, DuraBoard		
Minimum ½" thick	**N/A**	**N/A**
Fesco Board		
Minimum ¾" thick	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet:

(Option #1) One ply of JM APP Base, PermaPly 28, GlasBase Plus or Ventsulation mechanically fastened through the insulation with JM Structural Concrete Fastener or All Purpose Fasteners with UltraFast Metal Plates spaced 18" in a 4" side lap and 12" o.c. in two rows staggered in the center of the sheet.
(Maximum Design Pressure: –45 psf., See General Limitation #9.)

(Option #2) One ply GlasBase Plus mechanically attached through the insulation to the deck using UltraFast Fasteners and Metal Plates spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: -97.5 psf., See General Limitation #7.)

(Option #3) Two plies of PermaPly 28 or Ventsulation mechanically attached through the insulation to the deck using UltraFast Fasteners and Metal Plates spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: –52.5 psf., See General Limitation #7.)

Ply Sheet: (Optional) One or more plies of JM APP Base or APPeX 4S heat welded to base sheet while maintaining 4" side laps and 6" end laps.

Membrane: One or more plies of APPeX 4.5M or APPeX 4.5M FR heat welded while maintaining 4" side laps and 6" end laps.

Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, Grundy AL MB aluminum coating at a rate of 1-1/2 gal./sq. Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal./sq. or APOC 212 Aluminum Roof Coating at 3 gal./sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal./sq. with optional 60 lbs./sq. of roofing granules embedded in wet coating.

Maximum Design Pressure: See Fastening Options Above

Membrane Type: APP

Deck Type 3: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type E: Base sheet mechanically attached.

All General and System limitations apply.

Base Sheet: ***(Option #1)*** One ply of JM APP Base, PermaPly 28, GlasBase Plus or Ventsulation mechanically fastened through the insulation with Structural Concrete Fastener or All Purpose Fasteners with UltraFast Metal Plates spaced 12" o.c.at a 4" side laps 18" o.c. in two rows staggered in the center of the sheet. ***(Maximum Design Pressure: –45 psf., See General Limitation #9.)***

(Option #2) Two plies of PermaPly 28 or Ventsulation mechanically attached through the insulation to the deck using All Purpose Fasteners and Metal Plates spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: –52.5 psf., See General Limitation #7.)

Ply Sheet: (Optional) One or more plies of JM APP Base or APPeX 4S heat welded to base sheet while maintaining 4" side laps and 6" end laps.

Membrane: One or more plies of APPeX 4.5M or APPeX 4.5M FR heat welded while maintaining 4" side laps and 6" end laps.

Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, Grundy AL MB aluminum coating at a rate of 1-1/2 gal./sq. Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal./sq. or APOC 212 Aluminum Roof Coating at 3 gal./sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal./sq. with optional 60 lbs./sq. of roofing granules embedded in wet coating.

Maximum Design Pressure: See Fastening Options Above

Membrane Type: APP

Deck Type 3: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(1): Base sheet adhered with approved asphalt.

All General and System limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet.

Base Sheet: One ply of PermaPly 28 fully adhered to the primed deck with approved mopping asphalt at an application rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of JM APP Base or APPeX 4S heat welded to base sheet while maintaining 4" side laps and 6" end laps.

Membrane: One or more plies of APPeX 4.5M or APPeX 4.5M FR heat welded while maintaining 4" side laps and 6" end laps.

Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, Grundy AL MB aluminum coating at a rate of 1-1/2 gal./sq. Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal./sq. or APOC 212 Aluminum Roof Coating at 3 gal./sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal./sq. with optional 60 lbs./sq. of roofing granules embedded in wet coating.

Maximum Design Pressure: -305 psf. (See General Limitation #9.)

Membrane Type: APP

Deck Type 3: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(2): Base sheet heat welded.

All General and System limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet.

Base Sheet:	One or more plies of JM APP Base or APPeX 4S heat welded to the primed deck while maintaining 4" side laps and 6" end laps.
Ply Sheet:	(Optional) One or more plies of JM APP Base or APPeX 4S heat welded to base sheet while maintaining 4" side laps and 6" end laps.
Membrane:	One or more plies of APPeX 4.5M or APPeX 4.5M FR heat welded while maintaining 4" side laps and 6" end laps.
Surfacing:	(Optional) Install the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets. 1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
Maximum Design Pressure:	-315 psf. (See General Limitation #9.)

CONCRETE DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117, calculations shall be signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform with Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 61G20-3 of the Florida Administrative Code.

END OF THIS ACCEPTANCE